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Leading thinking for lasting results

Aerospace and Defense Industry Benchmarking Survey Results

2005 AIA Product Support Conference

November 9th, 2005

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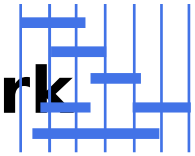
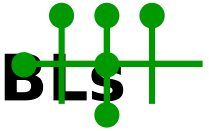
Findings and insights on performance-based logistics in the A&D industry

Why benchmark



How A&D industry supply chains are performing

Findings on the state of PBLs



What it means to be 'Performance-B

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Seminal study of A&D industry PBLs and their associated supply chains

OSD and AIA sponsored

Goals of the study

- ☑ Develop a measure of PBL progress thus far
- ☑ Understand which PBL practices lead to superior supply chain performance and which do not
- ☑ Develop recommendations and a path forward to improve future PBLs
- ☑ Provide readouts to participants with their individual results

Over-arching Goal

Validate case for moving overall industrial base up the PBL maturity scale

- Government win: better weapons system performance
- Industry win: shareholder value

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A&D PBL supply chain benchmarking provides insight into PBL value

PBLs align the supply chain building blocks…

- Organizations
- Practices
- Information

Alignment and process maturity lead to logistics performance

Maturity and performance leads to uplift

- Greater profits for industry and revenue from expanded service offerings
- Better performance and lower costs for government

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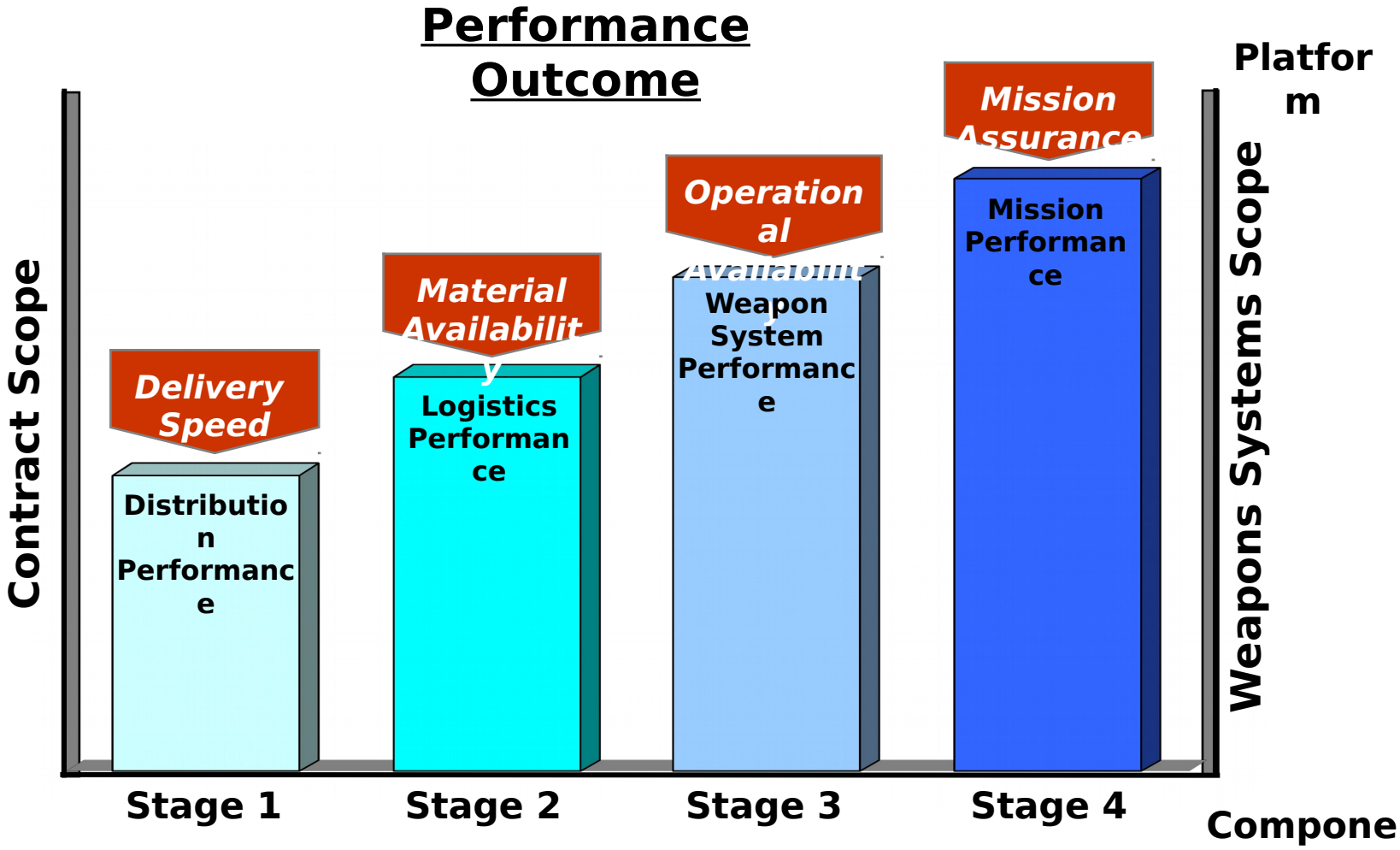
The study is based on the DoD standard maturity model



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Benchmarks allow improvement in practices leading to performance improvement

Practice Maturity…

Notional Data

DOMINANT PRACTICES
Supply Chain & IT Practices Assessment

		Stage 1: Functional Focus	Stage 2: Internal Integration	Stage 3: Cross-Enterprise Collaboration	Stage 4: eClass Functionality
PLAN	Strategy				
	Demand Planning				
	Supply Planning				
	Demand/Supply Balancing & Decision-making				
SOURCE	Strategy				
	Commodity & Process Management				
	Supplier Development / Management				
	Organization & Infrastructure				
MAKE	Manufacturing Strategy				
	Production Scheduling				
	Material Issue, Movement and Tracking				
	Manufacturing Process Control				
DELIVER	Enable				
	Order Entry & Scheduling				
	Warehousing, Transportation and Delivery				
	Invoicing and Cash Collection				
OVERALL	Supply Chain Strategy				
	Supply Chain Performance Management				
	Supply Chain Processes				
	Supply Chain Organization				

★ = Best in Class ● = Median ▲ = XYZ Co.

…Enables Performance Improvement

Supply Chain Performance Benchmark Comparison Population

Key Perspectives	*Metrics*	0% - 20% Major Opportunity	20% - 40% Disadvantage	40% - 60% Median	60% - 80% Advantage	80% - 100% Best-in-Class	Your Org.
Customer-facing Metrics:	On-Time Delivery to Request %			68.8%	▲	88.2%	87.1%
	On-Time Delivery to Commit %			74.7%	▲	95.0%	94.2%
	Order Fulfillment Lead Time			11.0	▲	6.4	8
	Upside Production Flexibility			42.0	▲	10.8	10
Internal-facing Metrics:	Total Supply-Chain Management Cost			9.0%		▲ 3.8%	1.2%
	Cash-to-Cash Cycle Time			93.6		▲ 42.7	15.4
	Inventory Days of Supply			74.9		▲ 17.7	9.4
	Net Asset Turns			▲ 2.0		10.8	5.5

There are between 25 – 30 organizations meeting the current criteria

Notional Data

This report uses the following Categories:

Industry: Electronic Equipment

▲ = XYZ Co.

Qualitative Practice and IT Assessment

Quantitative Performance Scorecard

Interpretation of performance drivers and practices

Understanding of current practices and their impact on key metrics

Development of hypothesis for potential improvement areas

Understanding of performance gaps and path to close

Notional examples for illustrative purposes only

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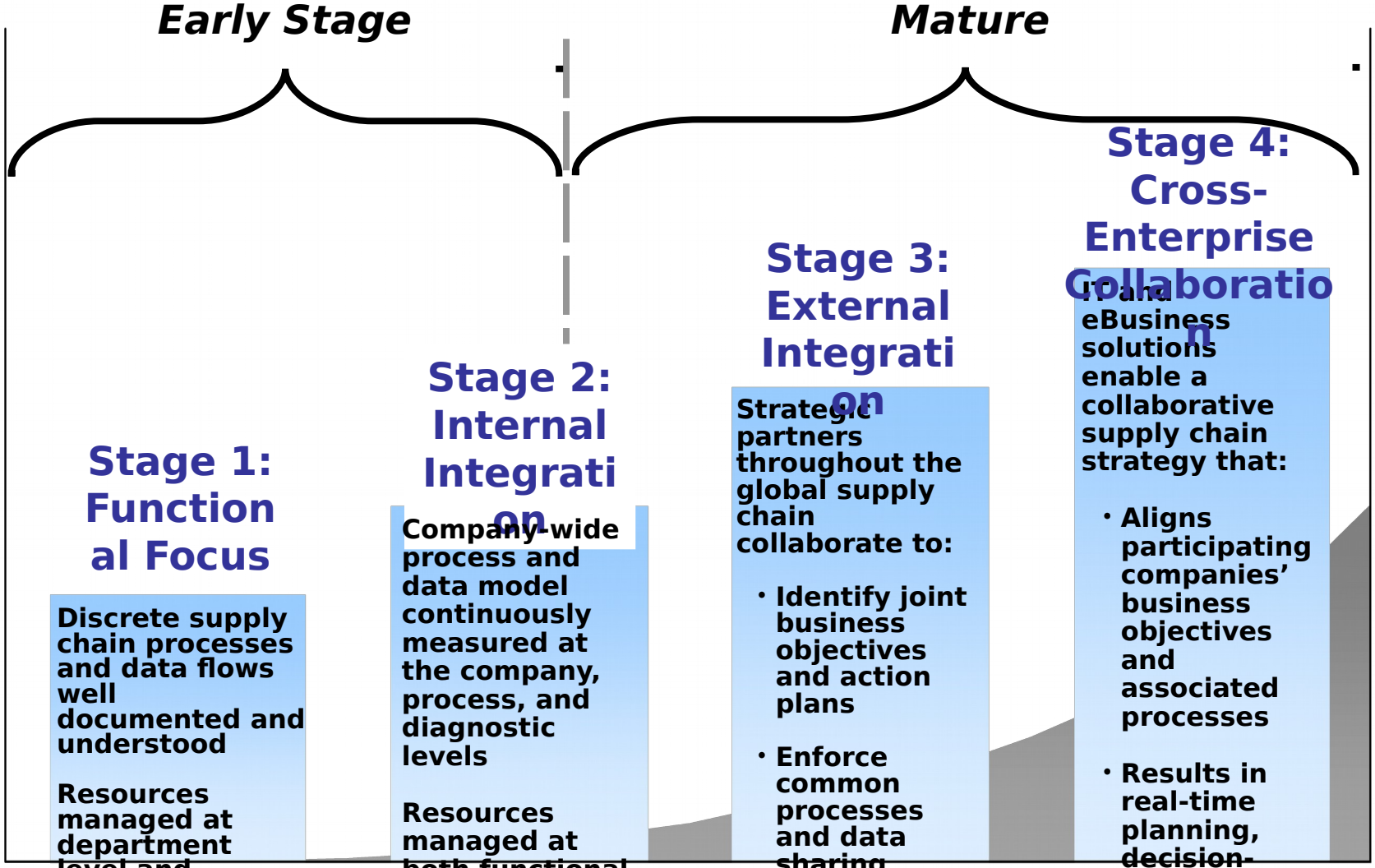
Understanding stage of maturity helps move toward world-class performance levels


Early Stage
Mature
Stage 1: Functional Focus
Discrete supply chain processes and data flows well documented and understood
Resources managed at department level and performance measured at functional level
Stage 2: Internal Integration
Company-wide process and data model continuously measured at the company, process, and diagnostic levels
Resources managed at both functional and cross-functional levels
Stage 3: External Integration
Strategic partners throughout the global supply chain collaborate to:
• Identify joint business objectives and action plans
• Enforce common processes and data sharing
Define, monitor, and react to performance
Stage 4: Cross-Enterprise Collaboration
IT and eBusiness solutions enable a collaborative supply chain strategy that:
• Aligns participating companies' business objectives and associated processes
• Results in real-time planning, decision-making, and execution of supply chain responses to
Practice Maturity

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Results in brief

PBL Supply Chains vs. traditional aerospace and industrial (A&I) supply chains

- Have lower costs as a percent of revenue
- Exhibit more mature practices
- Are challenged by customer speed requirement

Cost performance and practice maturity are highly correlated

Opportunities for improvement abo

- Sharing general results
- Survey sponsors receive more specific feedback
- Individual participants anonymous due to non-disclosure agreements
- Detailed individual feedback to participants

Survey responses indicate that A&D PBL supply chains are demonstrating superior performance in most areas

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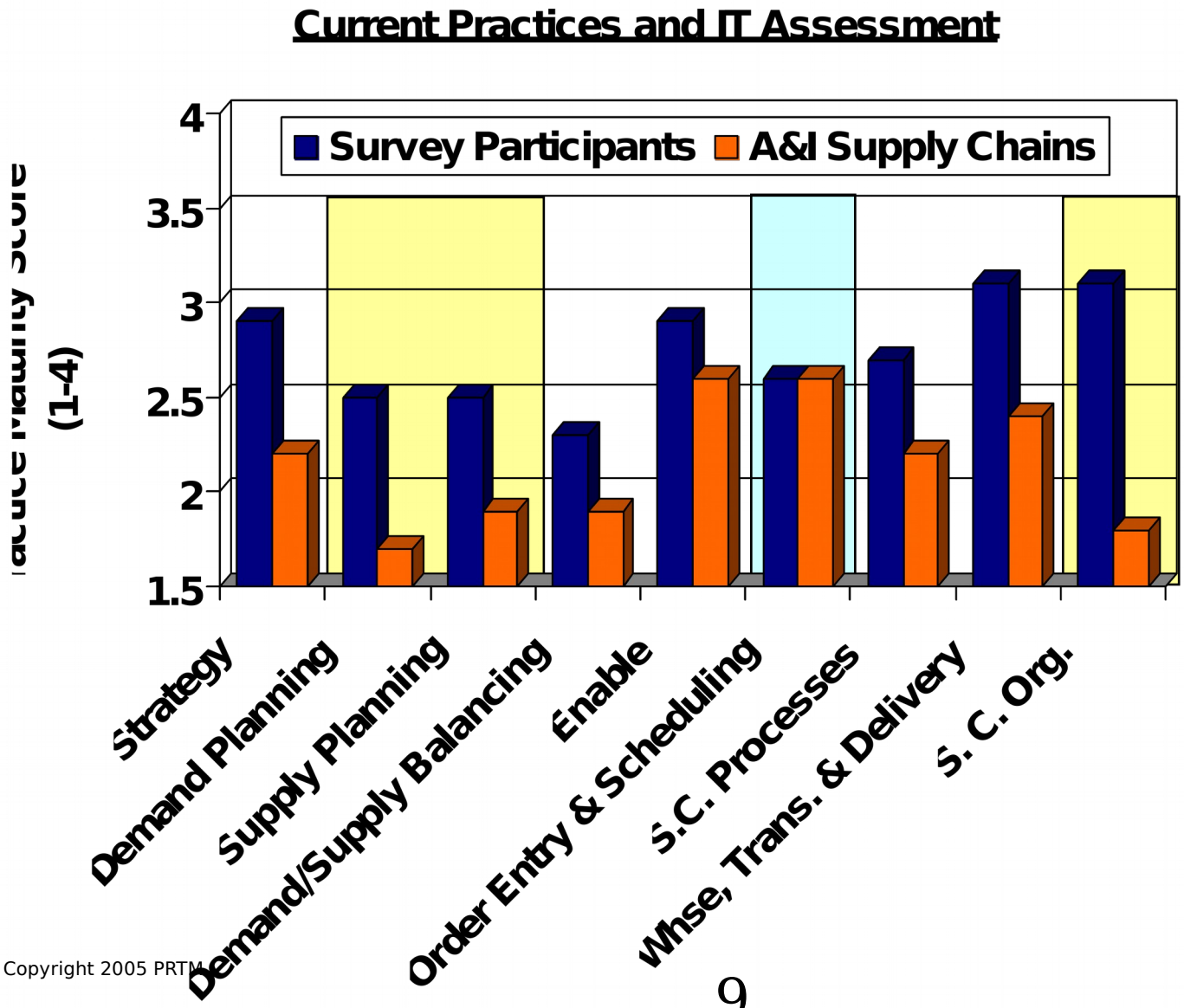
Survey participants describe significantly more mature practices than similar A&I supply chains



PBLs have relatively more mature planning processes and Supply Chain organizations

Order management is the only area where PBLs trail the rest of industry

4 = Collaborative
3 = External Integration
2 = Internal Integration
1 = Functional Focus

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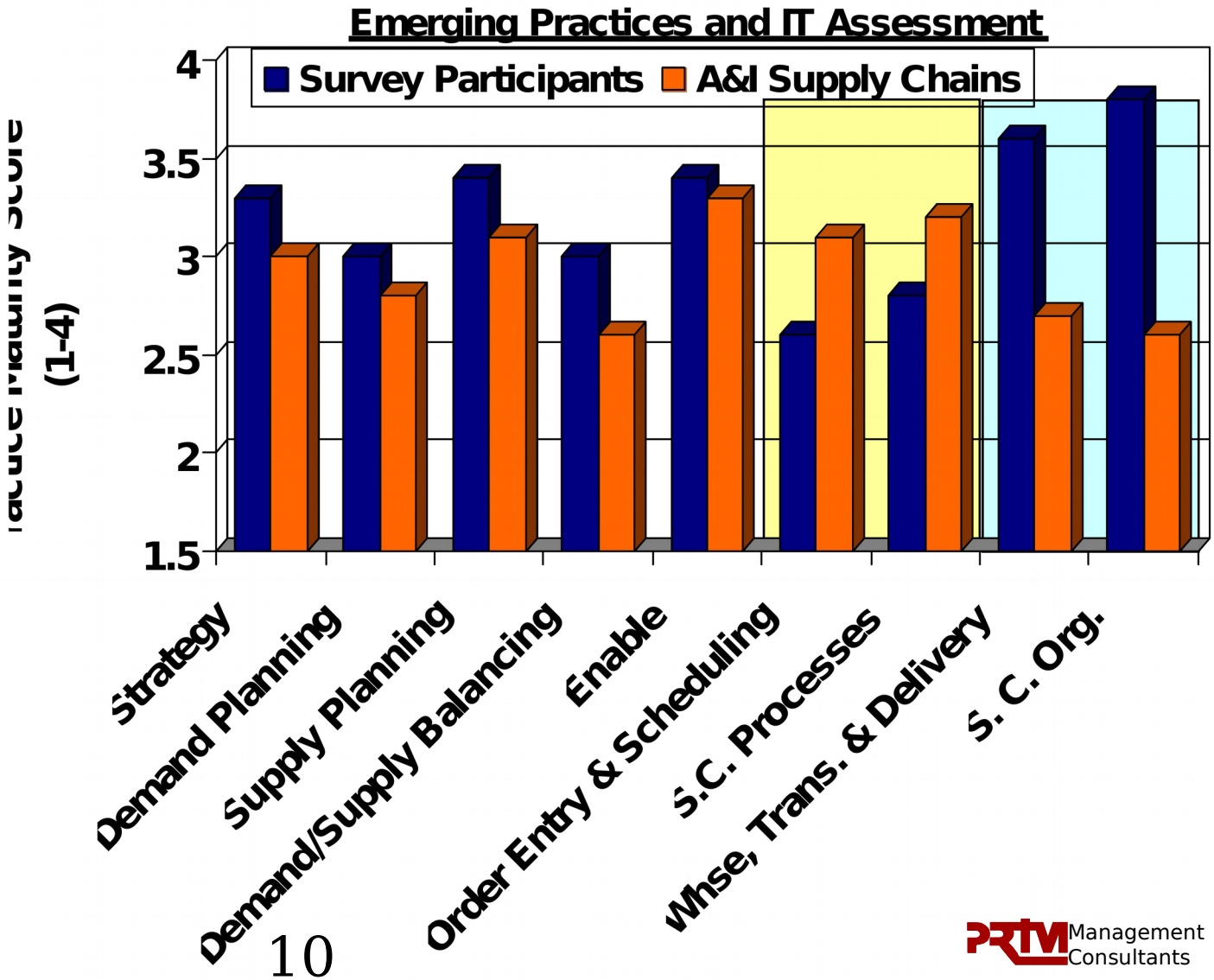
Survey participants are targeting more mature practices than similar A&I supply chains

PBLs are satisfied with order and supply chain processes and do not plan to growth in these areas

PBLs want to create very mature distribution capabilities and Supply Chain organizations



4 = Collaborative
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1 = Functional Focus

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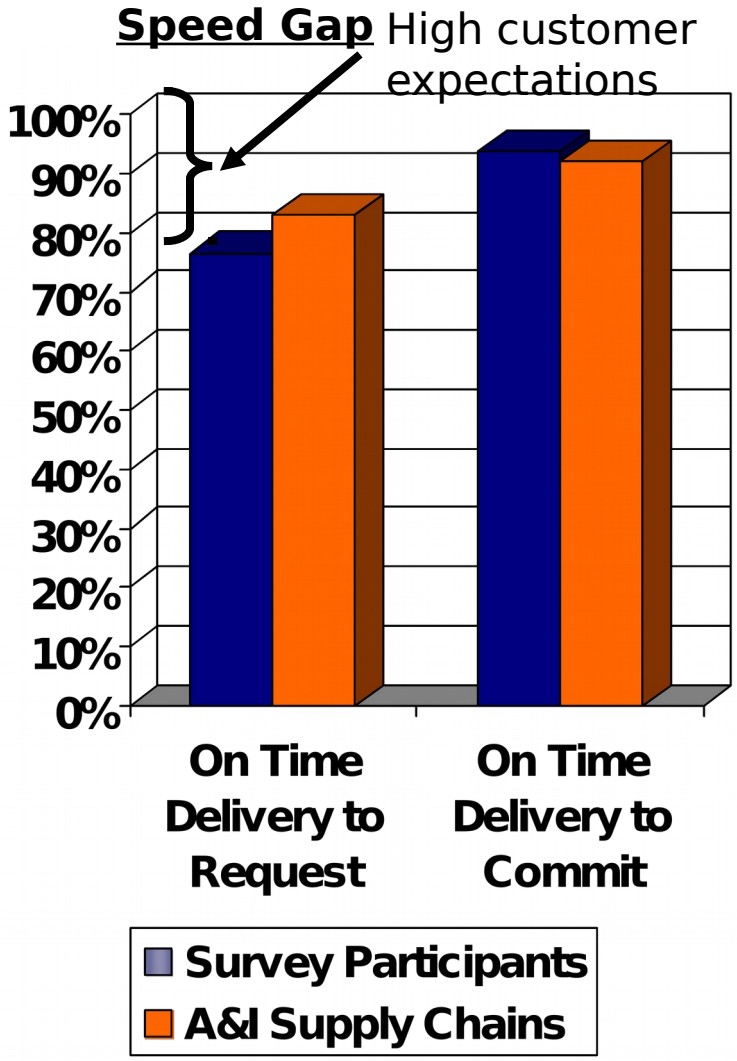
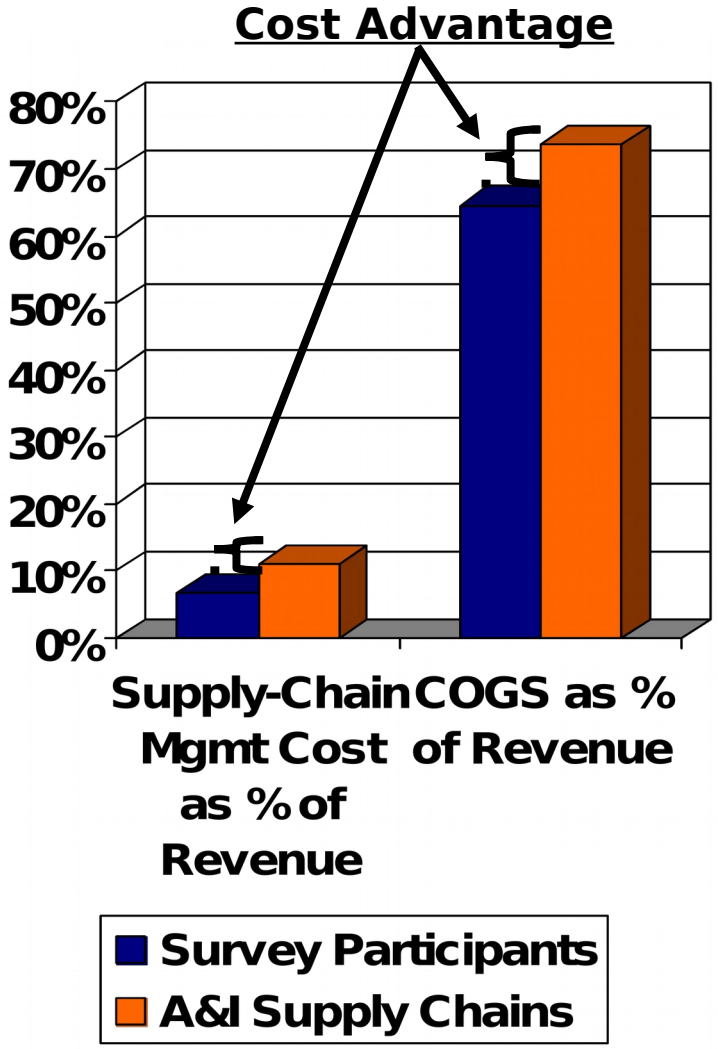
PBLs out-perform A&I supply chains on cost..., but encounter high customer expectations





Note: Other A&D Supply Chain assessments from PRTM historical benchmarking database

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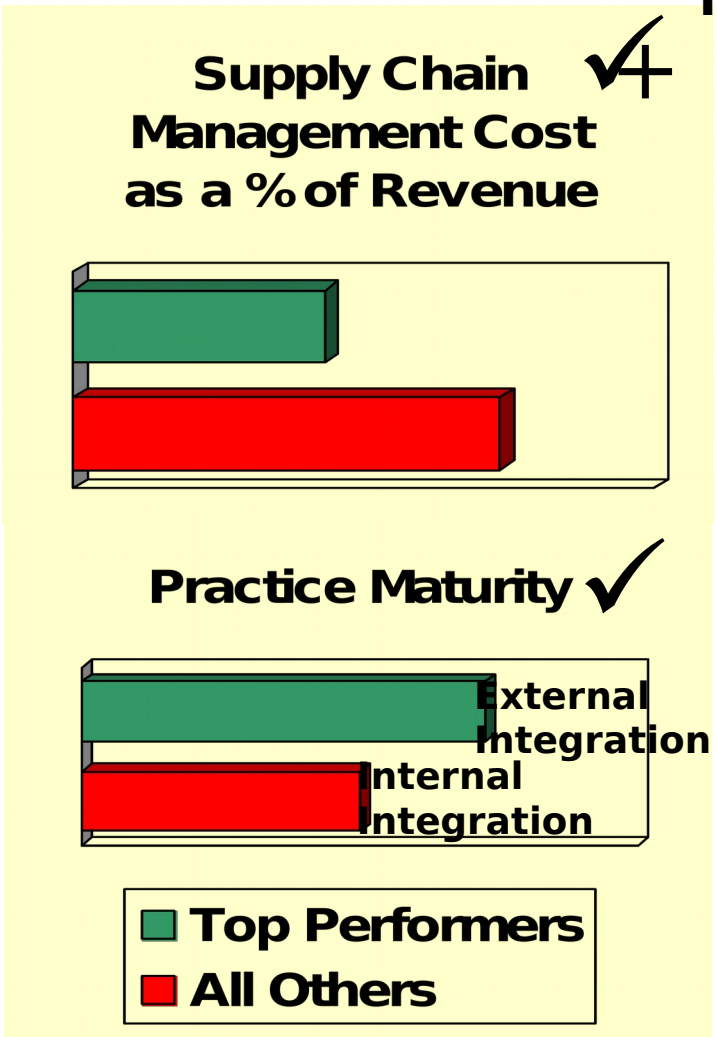
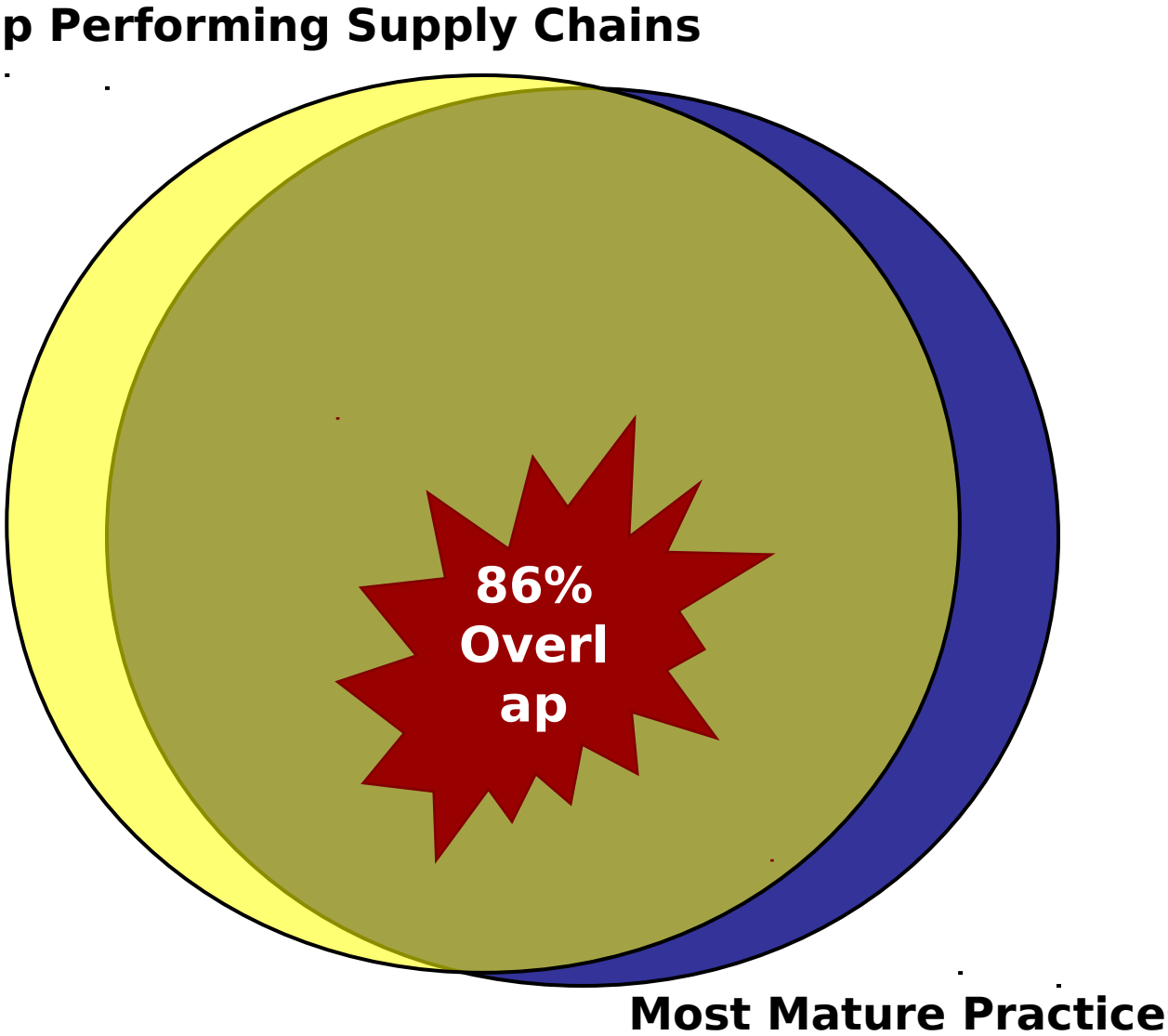
More mature practices have 42% lower supply management costs





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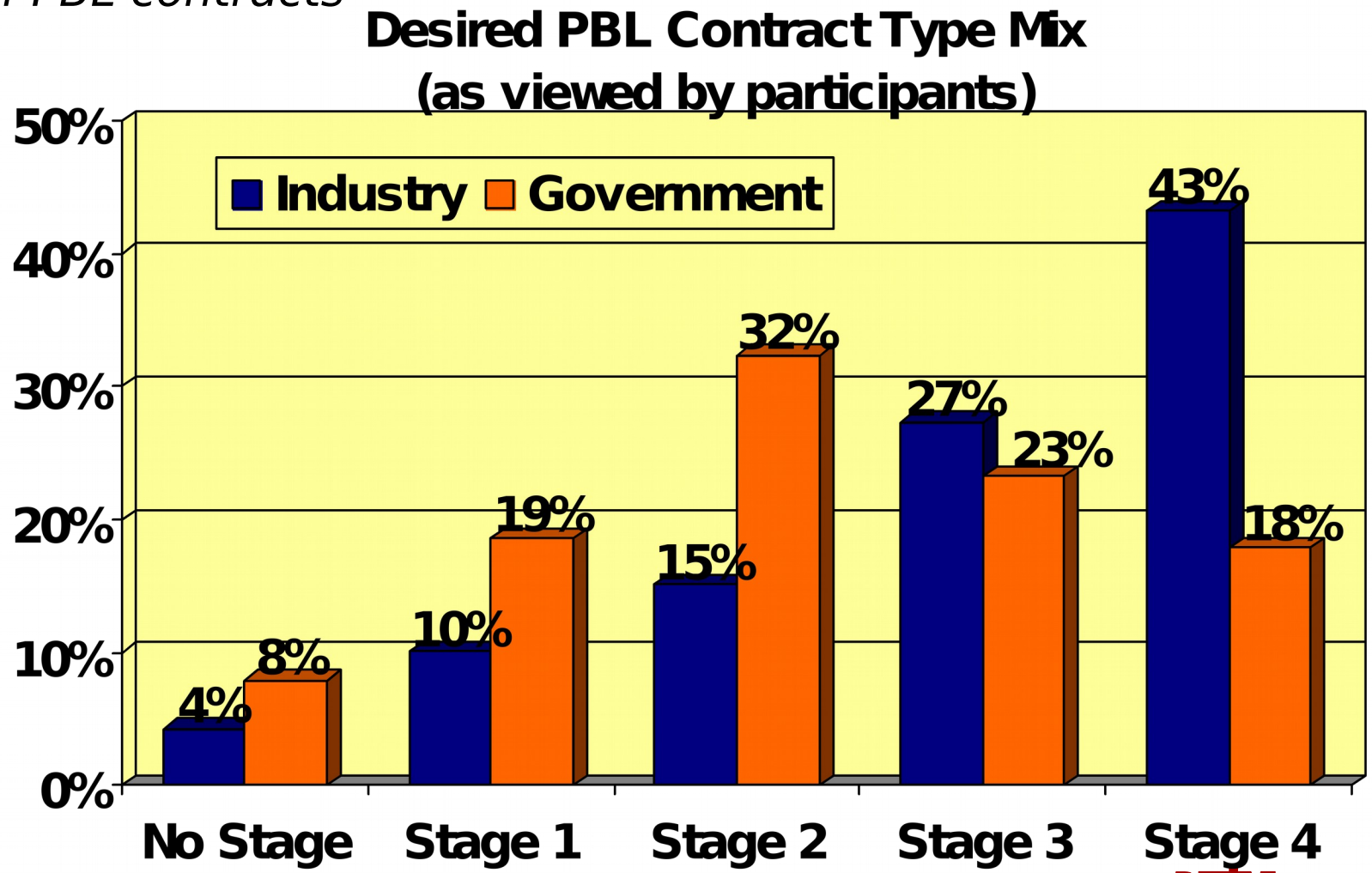
Participants see Government as less keen on more mature PBLs

Participants were asked to describe both their & the government's ideal mix of PBL contracts



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Participants view Government acceptance as the primary barrier to accelerating use and maturity of PBLs

When asked to rank the top 6 barriers to accelerating use of PBLS

(1 = most important; 6 = least important)

- … 71% Ranked education of Government employees as number 1 or 2
- … 57% Ranked multi-year funding as priority 1 or 2
- … 0% Ranked education of industry employees as number 1 or 2

100% of participants said industry is *more* willing than Government to use Mission Assurance PBLs !

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The study confirms known PBL challenges

Observed	Examples
Payment and incentives are not well aligned to outcomes ▪Lots of metrics, often not tied to payment	**PBL with 5 different performance metrics, but only one used as basis of payment**
Government owns, but industry manages inventory ▪No incentive to right size inventory	**<10% of PBLs transfer ownership of inventory to industry, but 100% transfer responsibility**
Contract lengths were too short ▪Need time to invest appropriately	**Half of the respondents had contracts of 3 years or less**
Industry has broad responsibilities, but government often retains decisional control ▪Value trade-offs are sub-optimal without authority	**Less than 18% had sole responsibility for the major value-chain activities: repair, configuration, and inventory**

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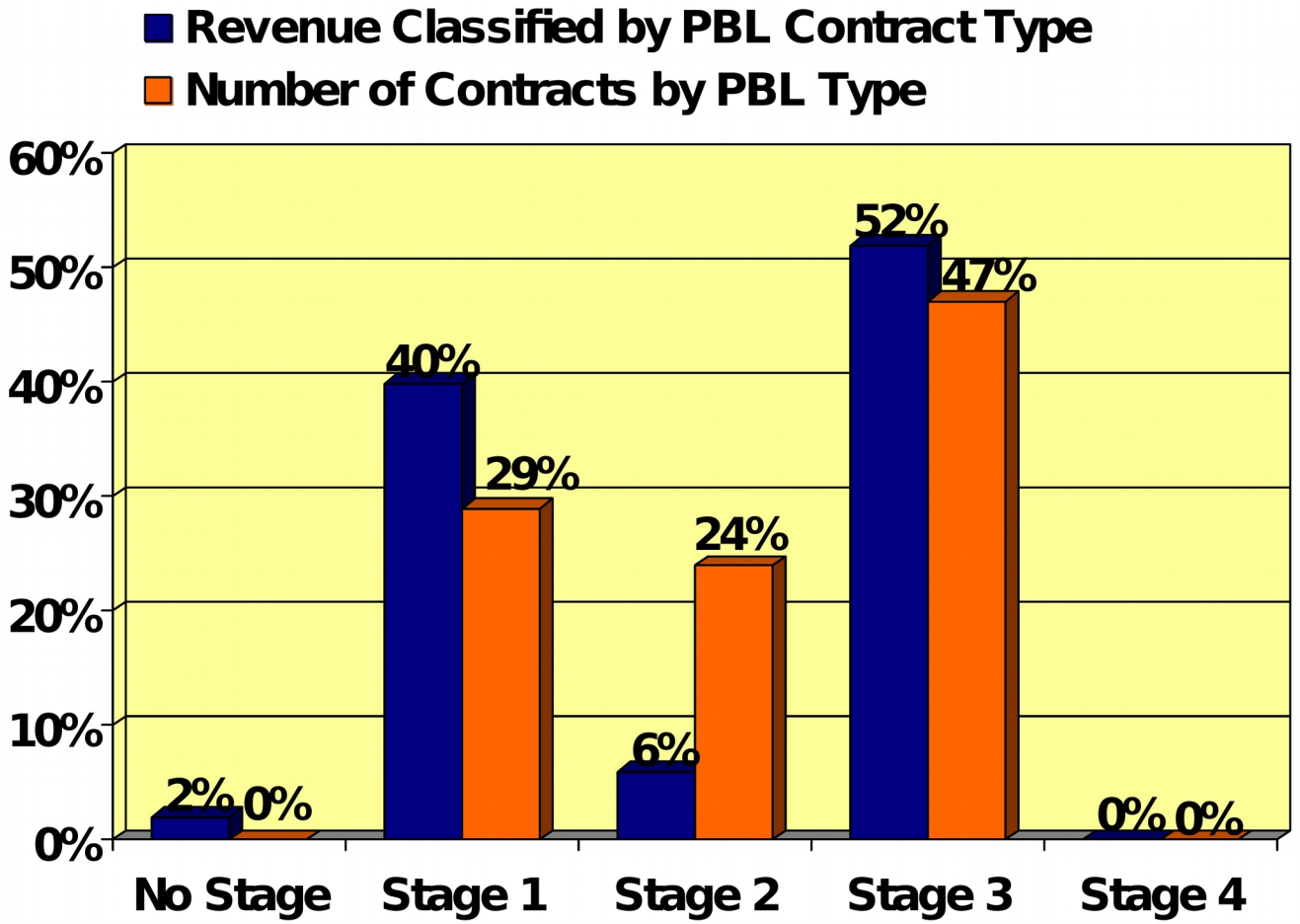
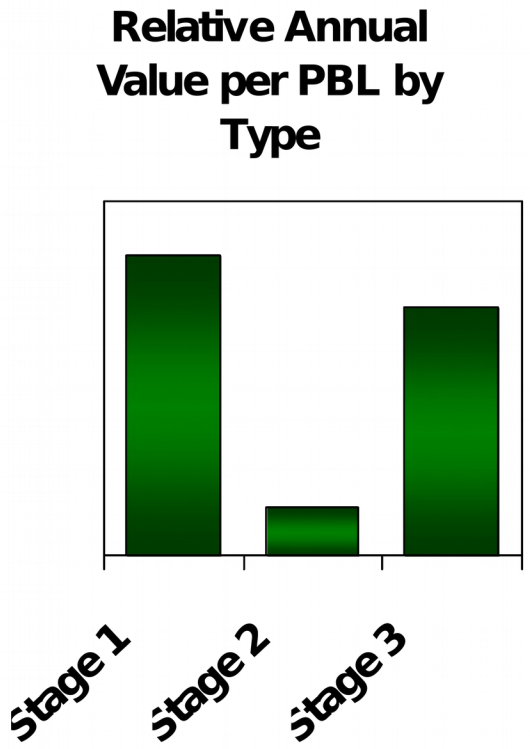
PBL contract revenue





PBLs accounted for ~35% of the participants' total revenue

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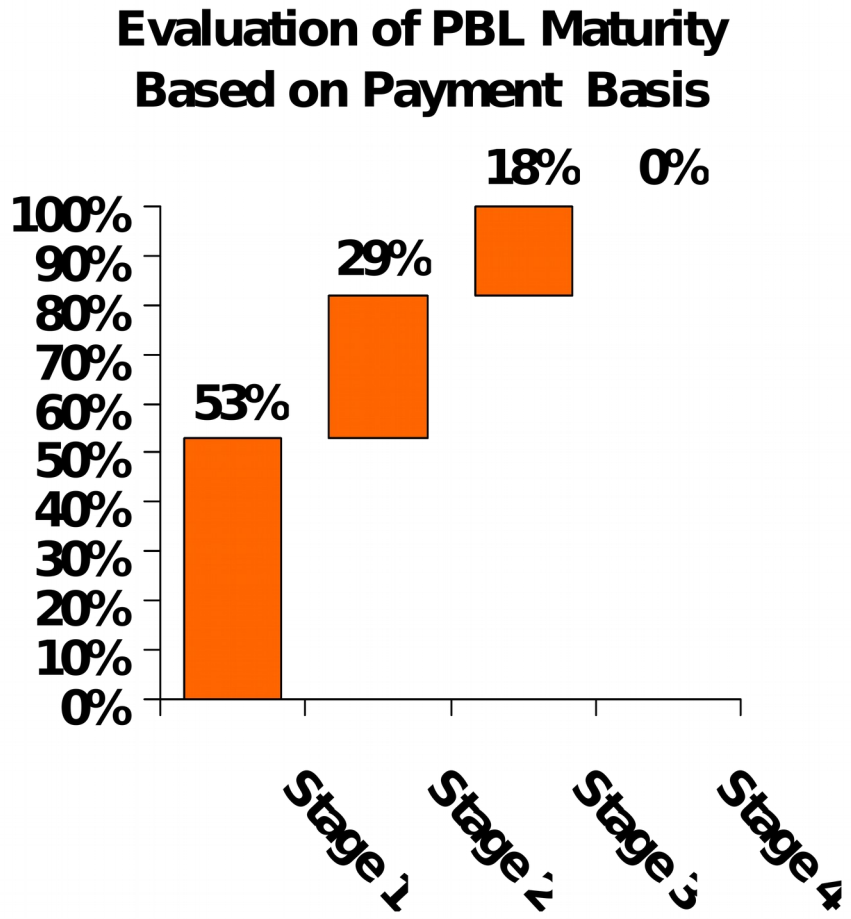
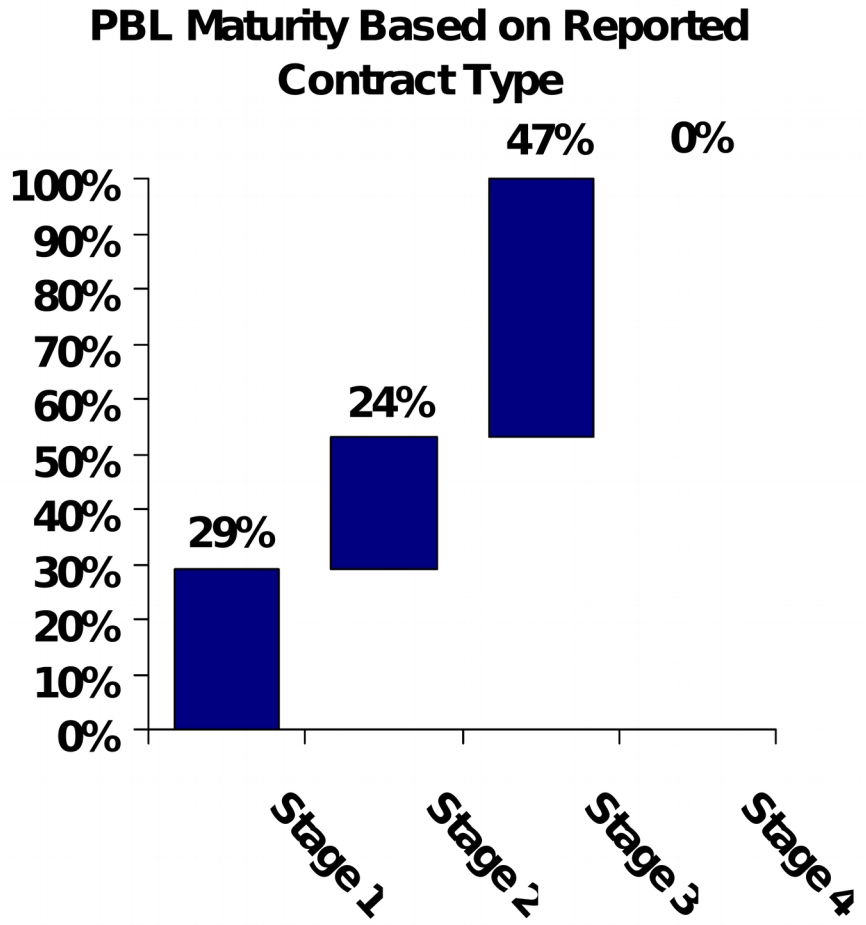
Maturity classification vs. payment





More than 50% of PBLs saw themselves as more mature by one stage than what the payment basis would suggest

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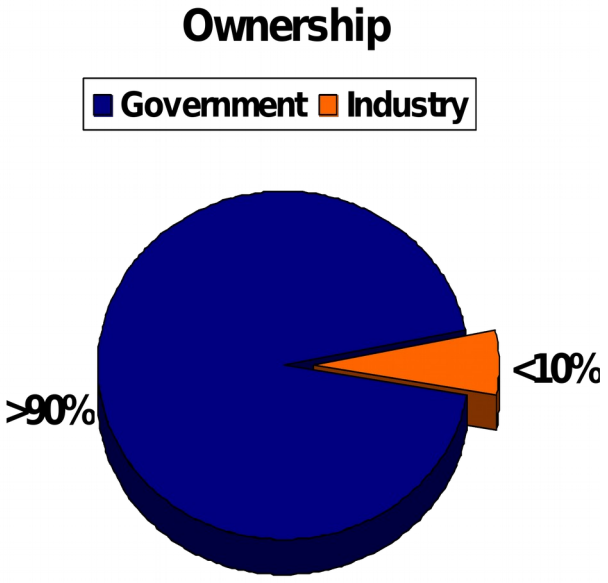
The case for inventory ownership

Industry has little reason to improve reliability when they can buy it with 'free' inventory

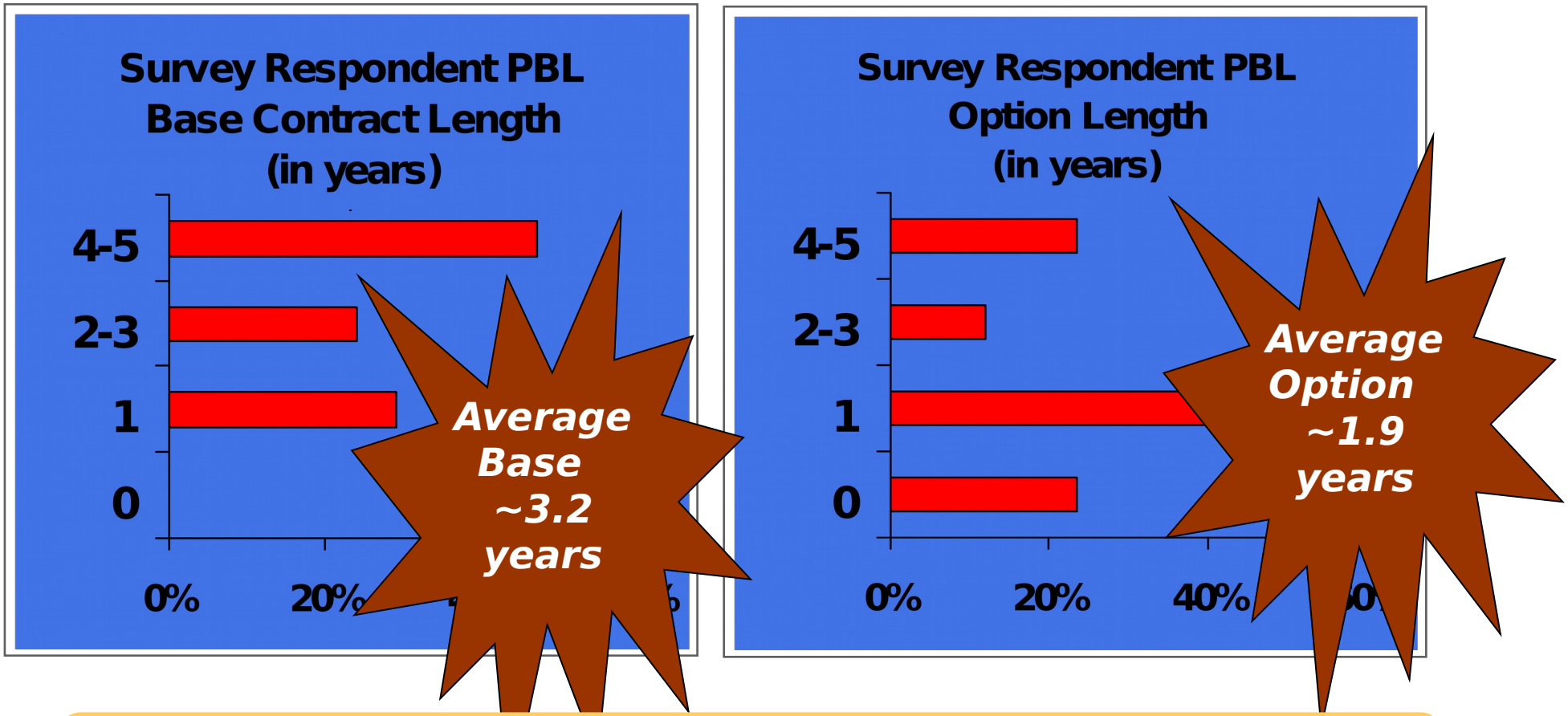
This type of arrangement may actually encourage <u>more</u> government-owned inventory



Weapons System Performance Levers	Supplier-Owned		Gov't-Owned	
	Cost to Supplier	Perf. Impact	Cost to Supplier	Perf. Impact
Increase inventory investment	$ - $$		n/a	
Invest in reliability improvement	$$$		$$$	
Decrease repair cycle time	$$		$$	

An AIA-Government working group on inventory ownership would facilitate innovative ways to address the inventory challenge

Average PBL life is only five years, even with options



Short option periods discourage continuous improvement

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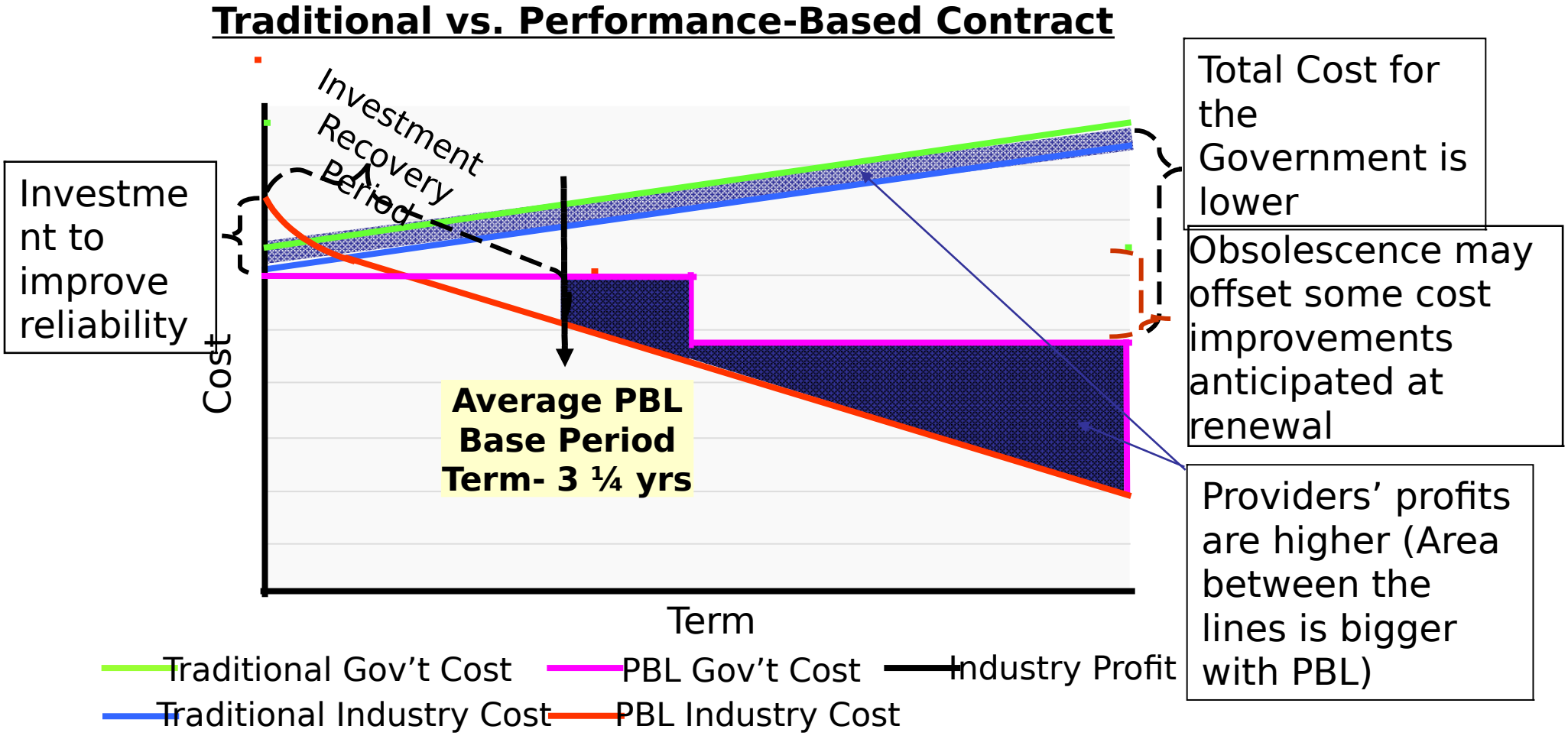
Contract lengths are often too short to create an incentive for industry to invest to create greater value


Traditional vs. Performance-Based Contract
Investment Recovery Period
Investment to improve reliability
Cost
Average PBL Base Period Term- 3 ¼ yrs
Term
Total Cost for the Government is lower
Obsolescence may offset some cost improvements anticipated at renewal
Providers' profits are higher (Area between the lines is bigger with PBL)
Traditional Gov't Cost
PBL Gov't Cost
Industry Profit
Traditional Industry Cost
PBL Industry Cost

Time creates incentives to invest to reduce costs

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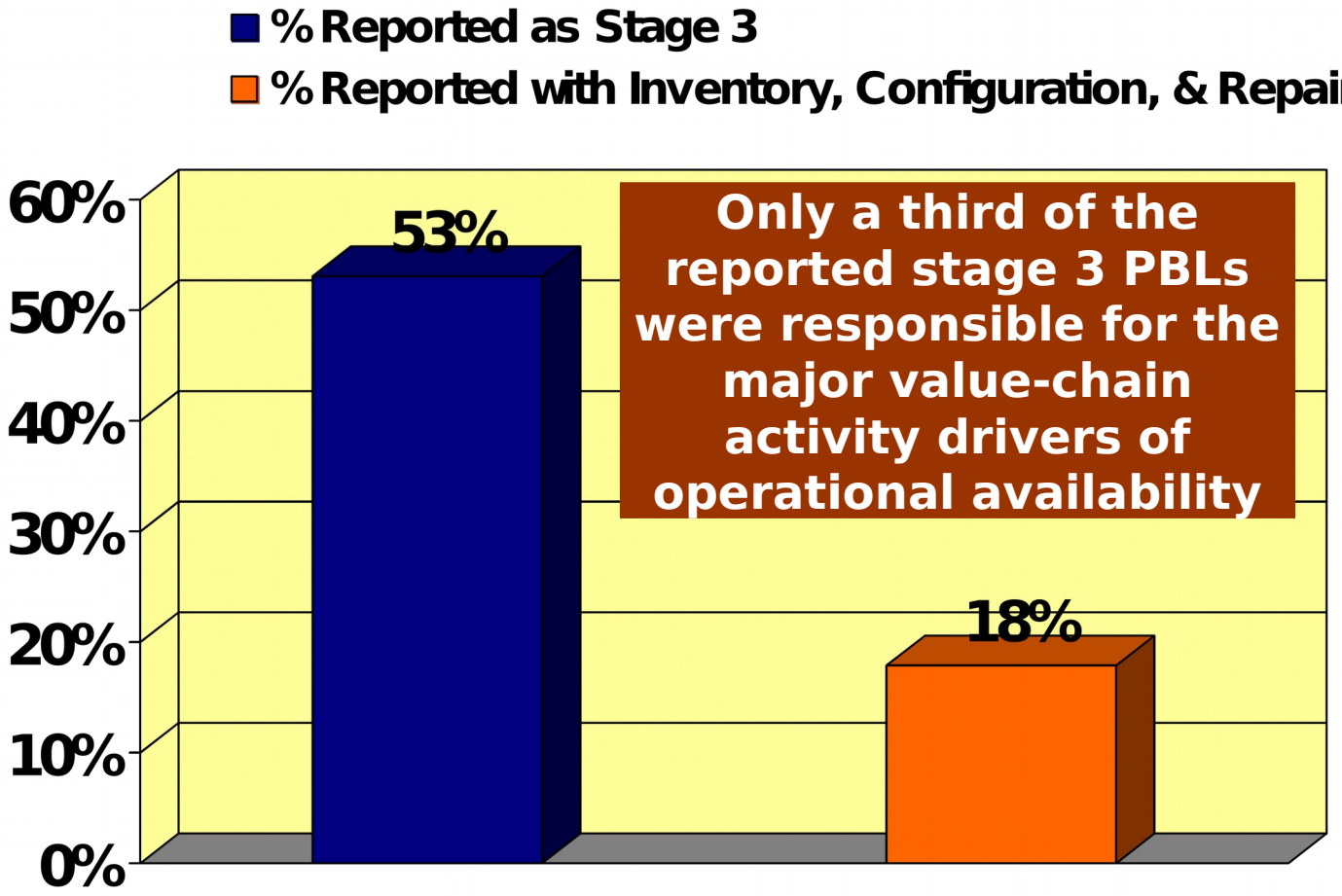
More value available



Government is missing the opportunity to unlock more value in terms of weapons system performance and life cycle costs

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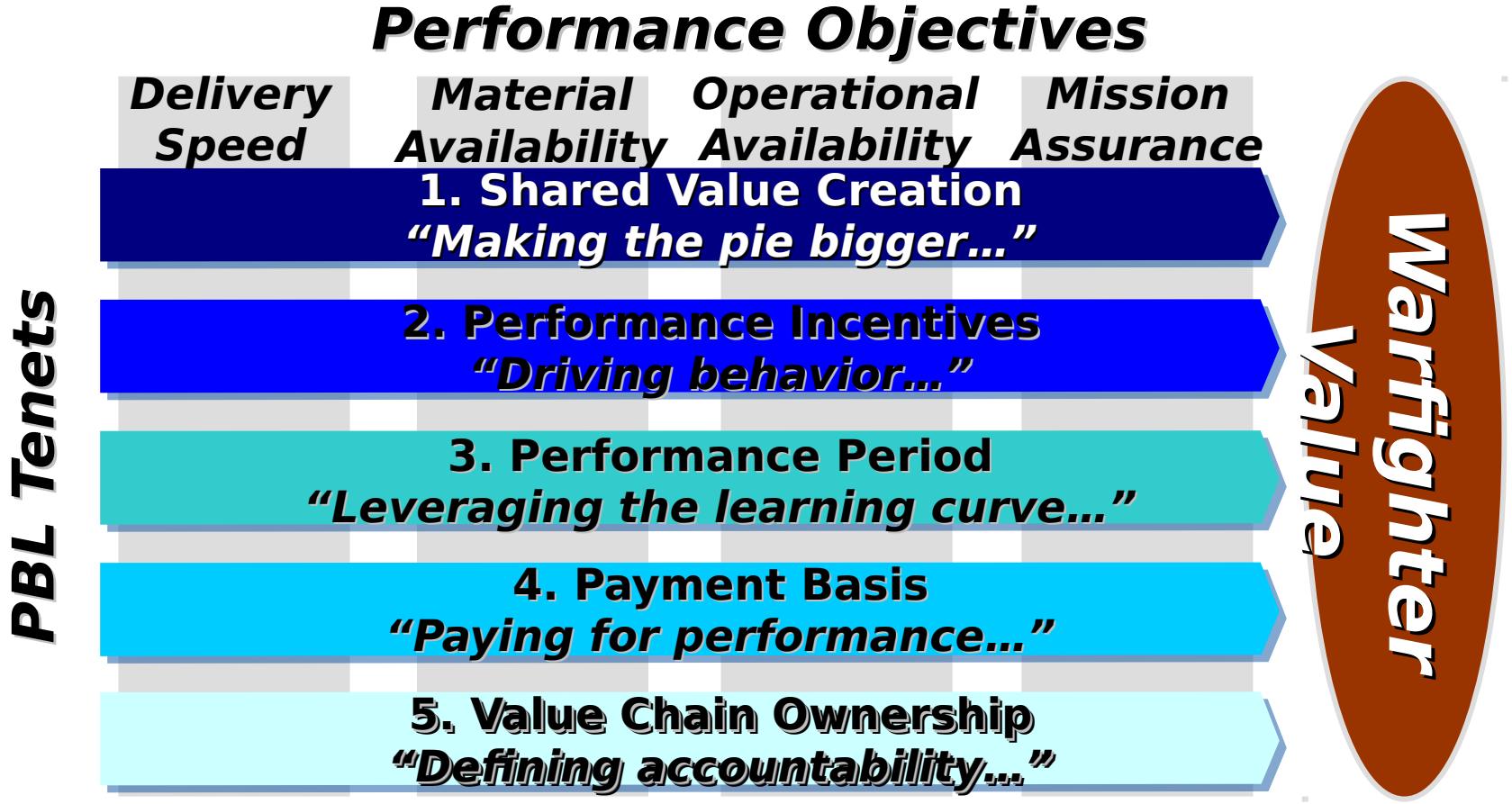
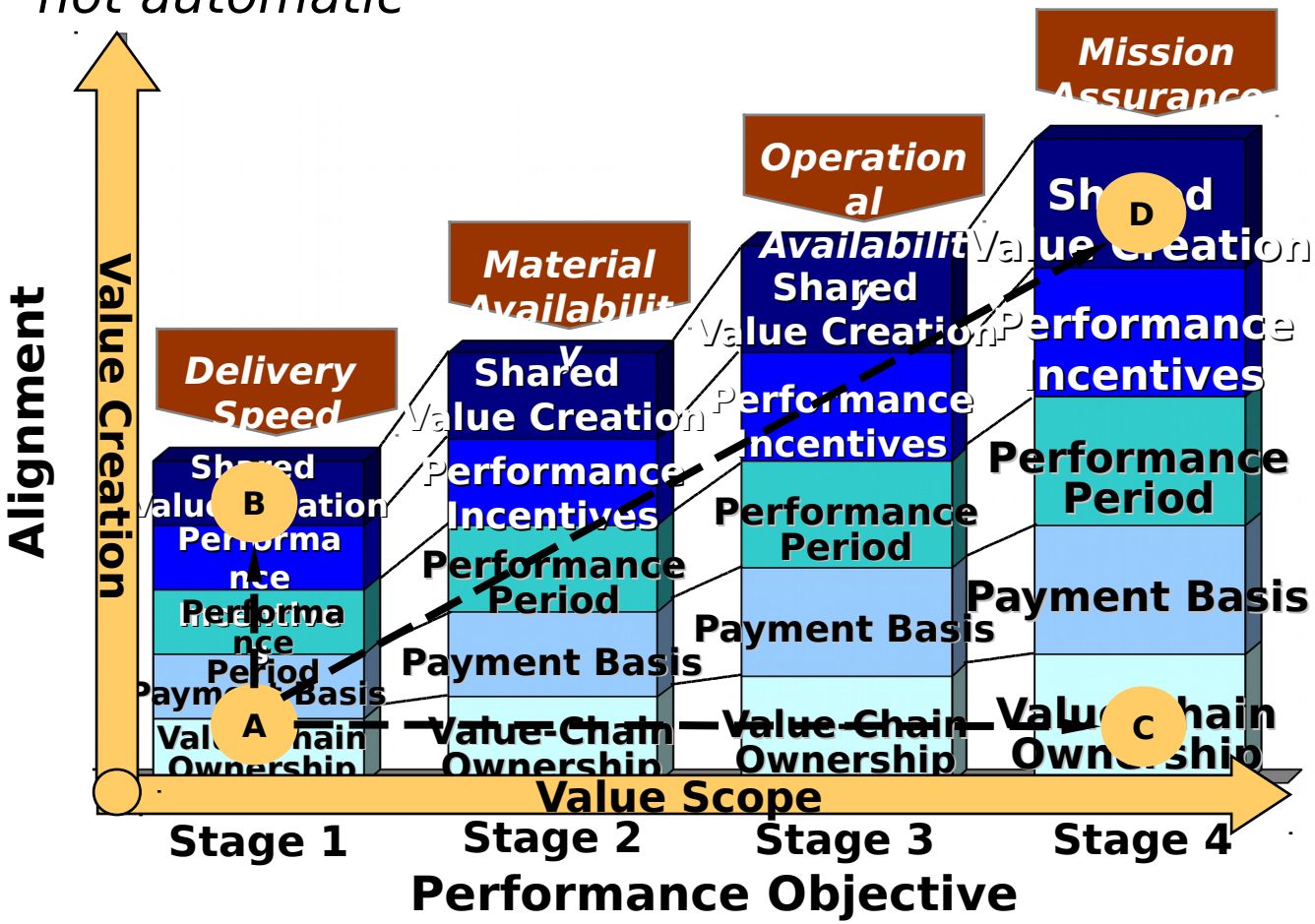
What it means to be performance based

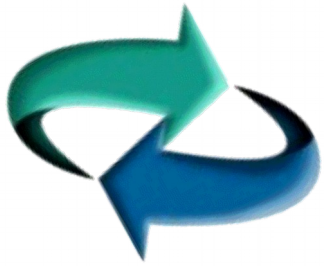


The PBL maturity framework provides a basis to explain the gaps in performance by creating a common lexicon and reference model

Synchronizing and aligning the tenets to the performance objective desired creates value for industry and the warfighter

Changing the objective creates more potential value, greater value is not automatic





The PBL Maturity Framework provides a way to break down a PBL into it's critical parts and

A-B: Alignment value creation

A-C: Scope value creation

A-D: Scope & alignment value creation

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Both government and industry have great opportunities to improve future performance-based relationships

	Gov't	Industry
Alignment		
Train contracts personnel on PBL concepts and metrics	☑	☑
All payments must be tied to desired performance metric	☑	
Leadership must continue to push for more mature PBLs – Stage 1's should be challenged	☑	
Inventory		
Use working groups to create collaborative inventory models	☑	☑
Longer partnerships		
Create incentives for continuous performance and cost improvements in base and option periods	☑	
Price option year risk when longer periods are needed to recoup investments		☑

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